THE DIRTY BOMB THREAT: PERSPECTIVES AND COUNTERMEASURES BY THE DEPARTMENT OF STATE

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Slide 1: I'd like to talk a little bit today about the international angle on the threat of radiological terrorism and some of the activities undertaken by the Department of State and others to address this threat.

Slide 2: In the talk, I'll discuss how the security environment has changed since 9/11; describe some of the challenges in securing radioactive sources; go over the role of the Department of State; and describe some of the activities undertaken by the U.S. government and international community to address the international threat of radiological terrorism.

Slide 3: As we all know, fissile materials hold the greatest capacity for mass destruction. For that reason, it has long been - and still is - a U.S. priority to ensure that such materials are not available to hostile nations. We have spent billions of dollars in the former Soviet Union alone to ensure that weapons of mass destruction materials and technology are secure from both internal and external threats.

But, while the threat of States diverting nuclear materials into clandestine weapons programs has long been with us, the events of September 11 taught us that smaller, sub-national groups are much better organized and capable of acting globally than we had assumed possible.

As a result, our concept of what terrorists are able and willing to do to harm civilians has changed fundamentally. Nuclear terrorism, including the use of radiological materials in a dirty bomb, is now recognized as a real and potentially growing threat.

While radioactive sources were primarily considered a safety concern before 9-11, we now realize that, if not adequately secured, these sources could be used by terrorists for malicious purposes.

The shift in our focus towards such threats is evidenced by the multitude of news articles that have published in the wake of 9-11.

Slide 4: This is an example of one released by ABC News. It describes a Senate Committee hearing in which nuclear experts testify on the threats posed by dirty bombs. Such articles illustrate how high profile this issue has become.

Slide 5: What makes these radiological weapons of great concern is that the necessary materials, the radioactive sources, are widely used and often poorly secured.

We do not have an accurate figure on how many radioactive sources exist throughout the world. But there are reportedly some 10,000 radiotherapy cancer treatment units worldwide, and many more radioactive sources used throughout industry.

In the U.S. alone, there are more than 2 million sources of ionizing radiation.

So unlike fissile materials, - which are consolidated in a limited number of stockpiles, in relatively few countries, and, in theory, can be secured by locking down the material,- highly radioactive sources are ubiquitous.

They are used in everyday life, all over the world - and there is a constant flow of materials into and out of nearly all countries.

Slide 6: For example, radioactive sources are used to treat cancer patients and diagnose diseases.

Slide 7: They are used as irradiators to preserve food or, in this case, enhance seed germination.

Slide 8: They are used to generate electricity in remote locations, to provide power for things such as communications and navigational equipment.

Slide 9: And, they are used for industrial radiography to check for welding errors in pipelines and buildings.

These highly portable sources pose a particular challenge for radiological security efforts.

Slide 10: Fortunately, there have not been any terrorist incidents resulting in widespread radioactive contamination.

However, we know from experience in decontaminating radioactive source accidents, that the cost to society of such an attack would be severe.

For instance, when radioactive material ends up with recycled metal and melted with the scrap, the actual costs for decontamination, waste disposal, personnel monitoring and mill shutdowns have averaged $10 million per incident, with one totaling almost $23 million.

In another example, Chechen rebels created a scare in 1995 when they placed a shielded cancer treatment device holding Cs-137 in a Moscow park, and then tipped off the reporters.

And in 1987, in the second worse civilian radiological accident after Chernobyl, scrap scavengers in Goiania Brazil broke into an abandoned cancer clinic and stole a medical device containing Cs-137.

Slide 11: When they pried open the lead canister, it revealed a "luminous blue powder" - 1,400 curies of Cs-137 - which the children and adults rubbed on their bodies so that they “glowed and sparkled”.

They parceled out the cesium to friends and family, spreading the contamination from the junkyard to homes around the city and exposing about 250 people - eight of whom developed radiation sickness and four died.

And because of the extent of contamination, 85 homes had to be demolished and enough radioactive waste was produced to cover a football field waist deep.

Slide 12: A “dirty bomb,” the most commonly discussed form of a radiological dispersion device, is a crude weapon made of conventional explosives, like TNT, combined with radioactive materials. The explosion generates a pulse of heat intended to vaporise or aerosolise the radioactive material into the air.

While the casualty risk of a dirty bomb is not in any way comparable to that of a nuclear weapon, it could trigger widespread panic, cause illness, and severely disrupt the economy.

With only a few ounces of Cs-137 or Sr-90, a dirty bomb could contaminate large areas of real estate with radiation and render some areas inhabitable for decades.

The impacts, of course, depend on a number of conditions, such as the wind speed, amount of explosives, and dispersivity of the material.

To give an example, a study by the Federation of American Scientists found that the dispersal of 3,500 Ci of Cs-137 by a dirty bomb in lower Manhattan would increase the risk of cancer by 50% over an area of 20 city blocks for 30 years.

And because the hot radioactive dust from the weapon may penetrate the cracks in the surfaces of sidewalks and buildings, and in some cases chemically bind to the concrete and glass, businesses and people covering an area of about 100 city blocks would likely have to be relocated - if the relocation standards of the Chernobyl accident are applied.

Needless to say, the property value in this area is estimated in the hundreds of billions of dollars.

Slide 13: Thankfully, radiological weapons have never been used. In part this is because they have long been considered too unpredictable for military purposes and the effects are too long delayed.

In addition, authorities previously assumed that there would be a clear economic incentive for the owners to protect these expensive sources from thieves. They also assumed that a person would not knowingly expose themselves to a potentially lethal dose of radiation.

After the 9-11 suicidal attacks, we no longer believe these to be adequate deterrents.

Concerns were heightened when American troops discovered detailed bomb-building instructions in Afghan caves used by Al Qaeda forces.

Concerns intensified further when news headlines touted the capture of an Al Qaeda operative, Jose Padilla, who ostensibly was planning to build a radiological weapon to harm the public.

Slide 14: As you all know, the role of Department of State is to carry out U.S. foreign policy, in this case in the areas of nonproliferation, arms control and regional security.

State leads interagency coordination on international nonproliferation and security issues, supports international activities and manages the distribution of resources for security assistance, and leads major nonproliferation negotiations and discussions with other countries.

Slide 15: From an international perspective, of particular concern to the U.S. are the large number of “orphan sources” worldwide. These are radioactive sources that have been lost, stolen, or abandoned and no longer in a controlled setting.

In the United States alone, on average about 300 sources are reported lost or stolen each year.

The problem is most acute in countries where civil authority and regulatory oversight are weak. The IAEA has reported that more than 100 countries lack adequate controls to prevent theft of these materials.

And it is particularly a problem in Russia and the former Soviet states where, after the collapse of the Soviet Union, much of the radioactive material that had been used in civilian and military applications was simply abandoned.

Slide 16: To address this concern, one of the things that is being done by the State Department is to help coordinate and support efforts to locate and secure dangerous orphan sources.

As you may recall last December, two canisters were discovered in a forest in the former Soviet republic of Georgia containing highly radioactive Sr-90.

The three woodsmen who found the abandoned portable generators slept overnight near the sources, using them as a source of heat. They suffered severe radiation sickness.

The Department of State, along with DOE, the IAEA and the Georgian government worked together to secure these field radioisotope thermoelectric generators.

Many more of these generators remain in uncontrolled settings and we continue to work with other governments to secure them.

Slide 17: You may have also seen the Washington Post's front page article on the cesium sources used in the 1970s for agricultural experiments in many of the former Soviet republics.

The purpose of these experiments was to deliberately expose plants to radiation and see the effects, for example to see if the plants would grow better.

We are now concerned that the devices containing this Cs - which number anywhere from 100 to a 1000 - may be poorly secured or abandoned and potentially fall into the hands of terrorists or sold on the black market.

To address this problem, the U.S. government, primarily through the Department of Energy, is supporting IAEA lead-efforts to search for and secure these devices in the former Soviet republics. In some cases this means having teams literally comb the countryside with radiation detectors, as can be seen in the photo.

Slide 18: In addition to these efforts, the U.S. – again primarily through the Department of Energy -- has joined forces with Russia and the IAEA to hunt down and secure missing radioactive material in Russia and the Newly Independent States to prevent their use in a dirty bomb.

The U.S. Congress is firmly committed to this work and has pledged $25 million this year towards these programs.

The U.S. government is also a strong supporter of IAEA initiatives. For example, we continue to support the IAEA's Model Project. Initiated more than a decade ago, the program assists States to create and strengthen their national regulatory structures to properly manage and secure sources.

We, along with 21 other States, have also made significant contributions in support of IAEA's new action plan - approved just last March - to combat nuclear terrorism. Under the plan, the Agency will substantially strengthen its efforts to prevent, detect and respond to malicious acts involving nuclear and radioactive materials and facilities.

Finally, the U.S. government provides general assistance to specific countries, such as Georgia and Armenia, to help them locate and better secure their radioactive sources.

Slide 19: While international assistance is important, ultimately it is the responsibility of each country to keep radioactive materials located on its soil safe and secure.

Because of the very large number of States that use radioactive sources of significance, a common set of ground rules can ensure that all exporters, recipients and users of sealed sources have a mutually understood basis for ensuring their safety and security.

The IAEA's Code of Conduct on the Safety and Security of Radioactive Sources contains basic guidelines for effective cradle to grave regulatory control of radioactive sources. It includes guidelines on such things as physical protection of the materials, access controls, training, notification requirements, export controls, national registries, and the like.

This August, the U.S. took an active role in helping to revise the Code to address the security concerns brought about by the 9-11 attacks.

Our goal is for all countries to eventually have adequate controls in place for securing those radioactive sources within their territory that pose the greatest risks. Such controls will help prevent sources from becoming orphaned and posing a security threat in the future.